CATALOGUE NO. 7.

FRASER & CHALMERS,

MANUFACTURERS OF

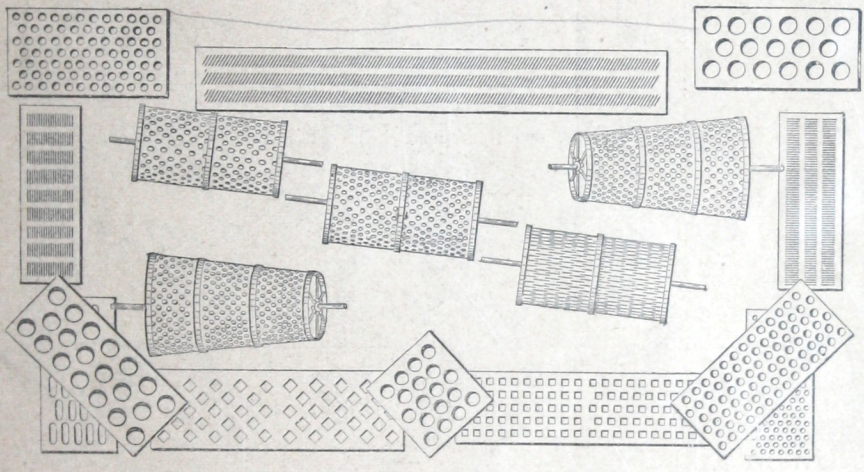
Perforated Sheet Metals

OF ALL KINDS FOR

Milling, Mining and Other Purposes,

AND DEALERS IN

WIRE CLOTH.



MANUFACTURERS OF

Corliss and Side Valve Engines, Boilers and Mining Machinery.

PRINCIPAL OFFICE AND WORKS:

Cor. Union and Fulton Sts., Chicago, Ill., U. S. A.

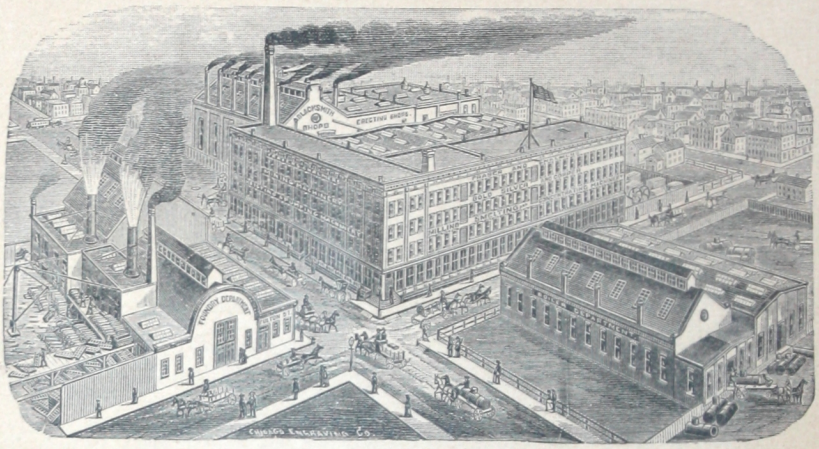
BRANCH OFFICES:

NEW YORK CITY,
No. 2 Wall Street.

DENVER, COL.,
No. 248 18th Street.

CHIHUAHUA, MEXICO.
11 Calle de Juarez.

FRASER & CHALMERS.



OFFICE AND WORKS:

Union and Fulton Sts., - Chicago, Ill., U. S. A.

CATALOGUE No. 7,

OF

PERFORATED METALS

AND

WIRE CLOTH.

FRASER & CHALMERS,

MANUFACTURERS OF

MINING MACHINERY,

GOLD, SILVER AND COPPER MILLING AND DRESSING MACHINERY,

ENGINES AND BOILERS, ETC.

Cor. Union and Fulton Streets, Chicago, Ill., U. S. A.

DAVID R. FRASER, THOS. CHALMERS, WM. J. CHALMERS, NORMAN D. FRASER.

JANUARY, 1886.

In presenting this circular to our friends, and the public generally, we have anticipated the increasing demand for perforated metals, and have provided ourselves with the latest improved machinery, and now consider we are able to meet all demands for these goods in a prompt and satisfactory manner. Perforated metals are far superior to wire cloth, being much stronger, more uniform in size of hole or mesh, not liable to tear or rust out. In case of breaking are easily repaired, without affecting the entire sheet, as in the case of wire cloth a break extends over whole sheet, changing the mesh and making it unfit for use.

We furnish this work in Iron, Copper, Brass, Steel, Zinc, Tin and other metals, any thickness from No. 30 wire gauge to ½ inch thickness of plates, punched in proportion to thickness of metal, with spaces as close to sizes wanted as the diameter and spacing of perforations will permit. We invite correspondence from parties who may have any new designs or use for the metal, and can assure them our prices and quality of goods are unexcelled. Soliciting your trade, we are,

Very respectfully,

FRASER & CHALMERS.

NOTICE.

We would respectfully request our friends and customers, when making inquiries regarding styles or prices of perforations, to favor us with the following information, as it will save unnecessary delay and correspondence.

1. **KIND OF METAL WANTED,** with size of sheets in inches each way.

2. **SHAPE AND SIZE OF PERFORATIONS,** if slot, oval or oblong. Which way of sheet do you wish the perforations to run?

3. **THICKNESS OF METAL,** by Brown and Sharpe's (Am.) or Birmingham (English) gauge, or send sample thickness of metal wanted.

4. **THE WIDTH OF MARGINS** or blanks wanted, if any; also state if you want screw-holes in margin to fasten on frames.

5. **IF FOR CYLINDER SCREENS,** do you want the plates rolled?

6. **IF YOU DO NOT KNOW SIZES** wanted, state what use you have for it, or send sample.

7. **IF PERFORATIONS ARE SQUARE, ROUND OR OVAL,** state what distance you wish between them, measuring from center each way.

WE FURNISH PERFORATED METALS

— FOR —

Mining Screens.
Stamp Batteries.
Grizzley Plates.
Coal Screens.
Breweries and Malt Houses.
Glucose and Sugar Works.
Cotton and Linseed Oil Mills.
Gravel and Sand Screens.
Grain Separators.
Shot Towers.
Rice Mills.
Flax Riddles.
Malt Kilns and Grain Dryers.
Stone Screens.
Revolving and Shaking Screens.
Coal and Ore Screens.
Mill Furnishing.
Smut Machines.
Corn Screens.
Fanning Mills.
Distilleries.
Thresher Riddles.
Drive Well Points.
Loco. Spark Arresters.

And many other uses.

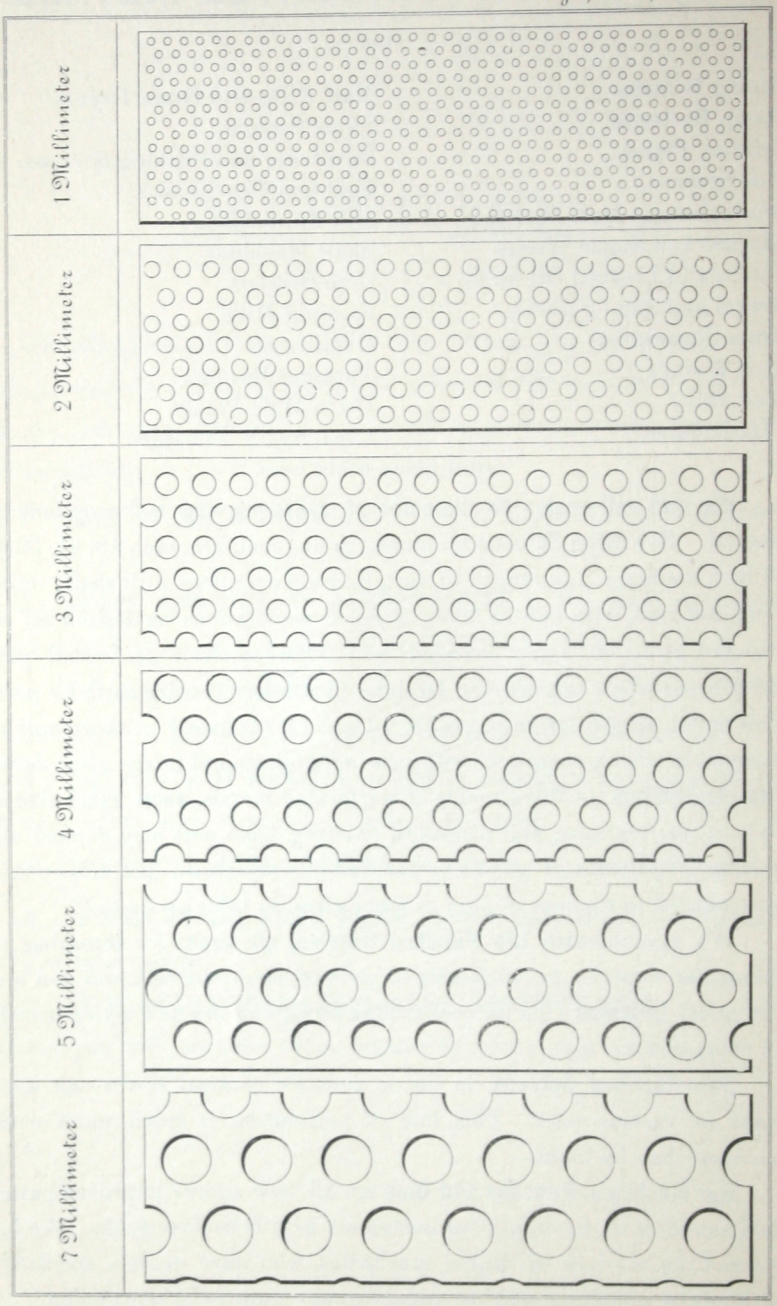
We can roll plates to diameter of cylinders, and make cylinders if wanted. **Revolving Screens** for stone, grain, coal, ore, etc., 18, 24, 30 and 36 inch diameter, any length to suit, finished complete with shaft, in iron, steel and zinc, with one or more sizes of perforations as desired, so constructed as to be easily changed, and different sized perforated plates substituted when necessary. Designs of screens in wire cloth or perforated metal, as per cut on pages 12, 13 and 14, furnished on short notice at reasonable prices, complete, with gearing, pulleys and boxes when desired. **The illustrations** in this circular of perforated metals, **show exact size** and style of perforations, and parties in ordering from cuts may depend upon getting metal work of same size perforations as shown, and of any thickness wanted to number of iron or steel given in table on page 16.

We manufacture **Lip Punched Riddles, all sizes,** for threshing machines, far superior to old-fashioned style of hand-punched, and at a much less price. **Indented Zinc** for cockle separators, any size and style, furnished on short notice.

Burr Punched Screens, in tin or zinc, for oatmeal sieves—an assortment of various sizes. This line of perforation is much more evenly punched than by hand.

Our Machines, Punches and Dies are all new and of improved pattern, thus enabling us to supply our customers with first-class work. We have secured the services of skilled mechanics, who have made a specialty of all kinds of punching, and we guarantee our work to be unexcelled.

Plate 115.

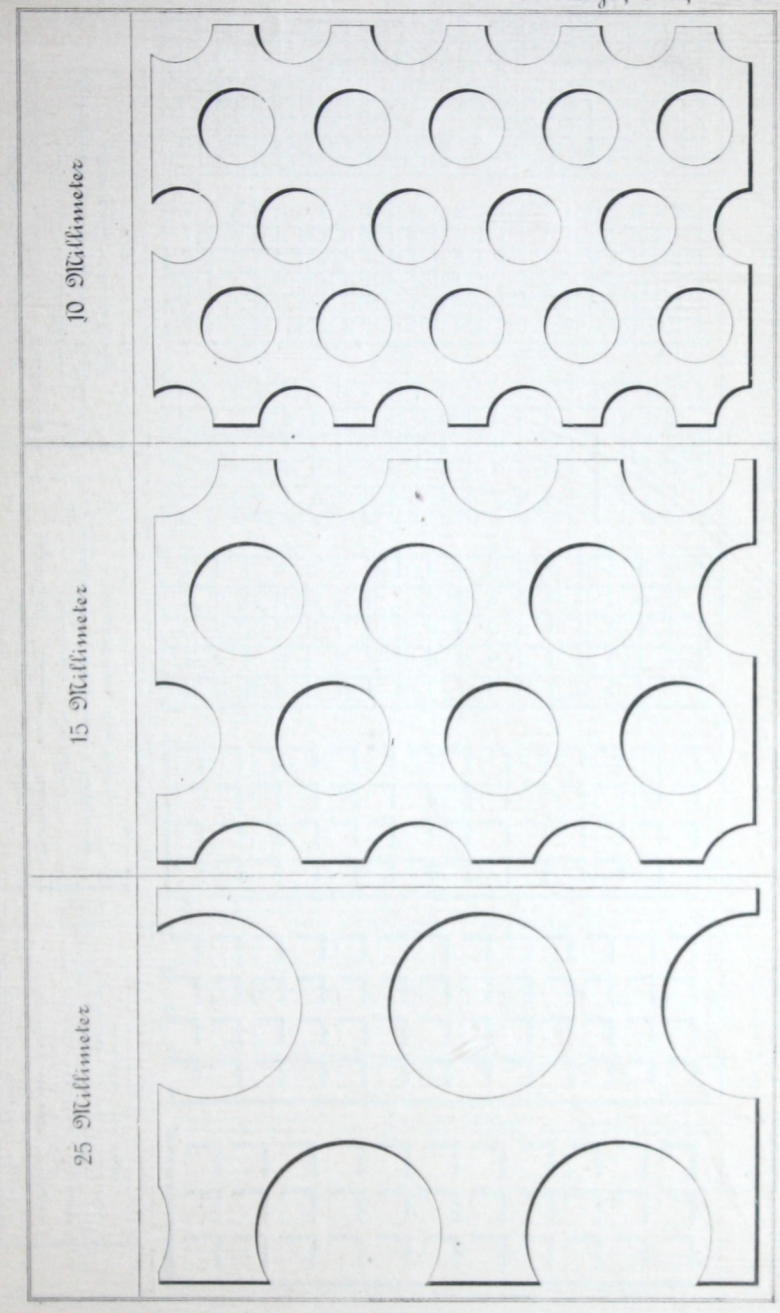


Punched Screens.

Plate 104.

Fraser & Chalmers,

Chicago, Ill., U. S. A.



Punched Screens.

Plate 105.

Fraser & Chalmers,

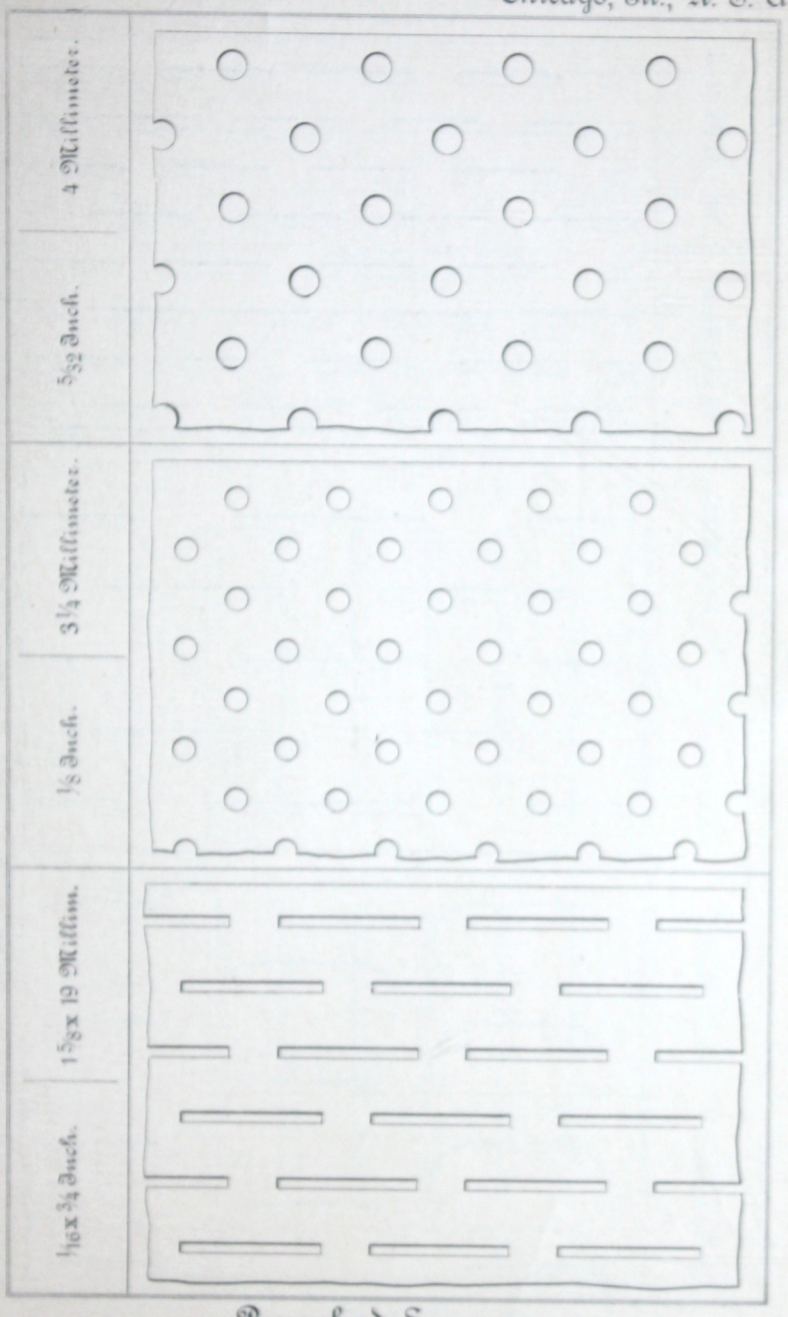
Chicago, Ill., U. S. A.

Punched Screens.

Plate 137.

Fraser & Chalmers,

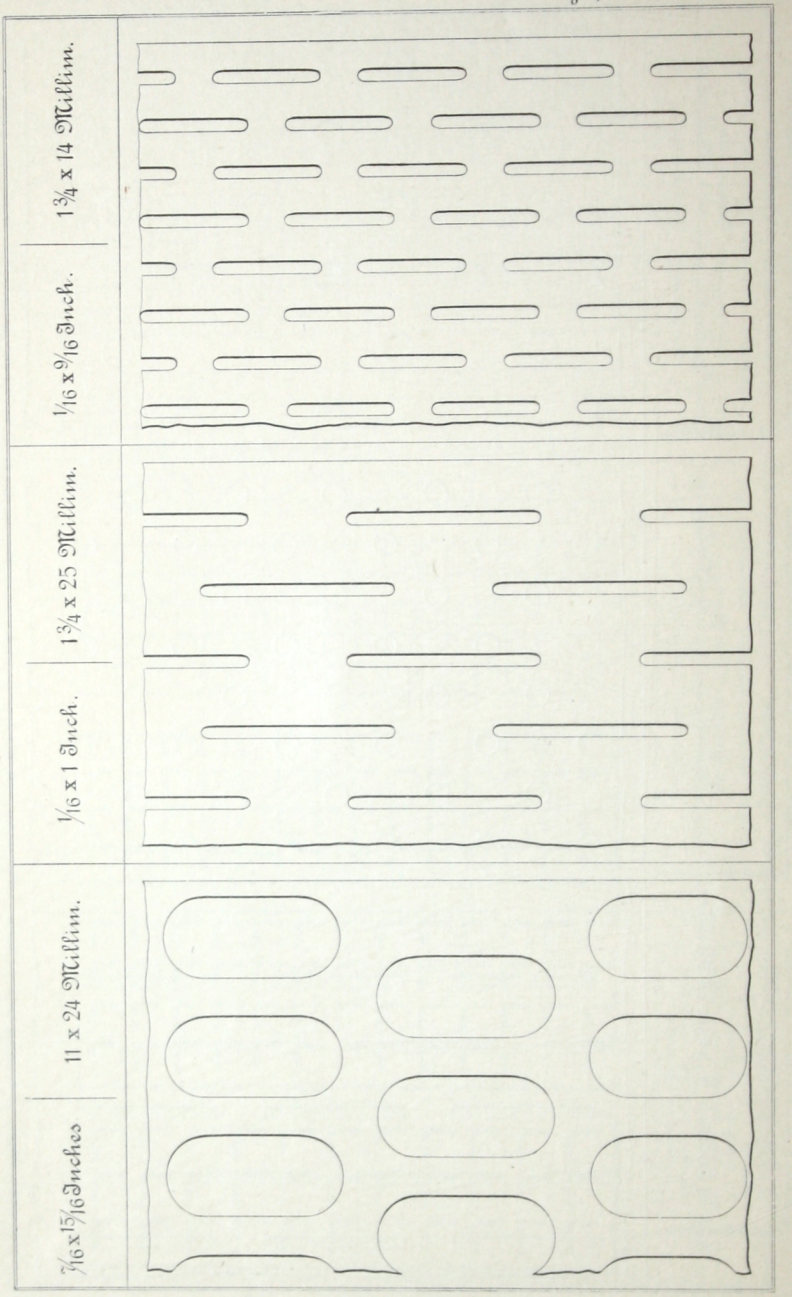
Chicago, Ill., U. S. A.



Punched Screens.

Plate 136. Fraser & Chalmers,

Chicago, Ill., U. S. A.

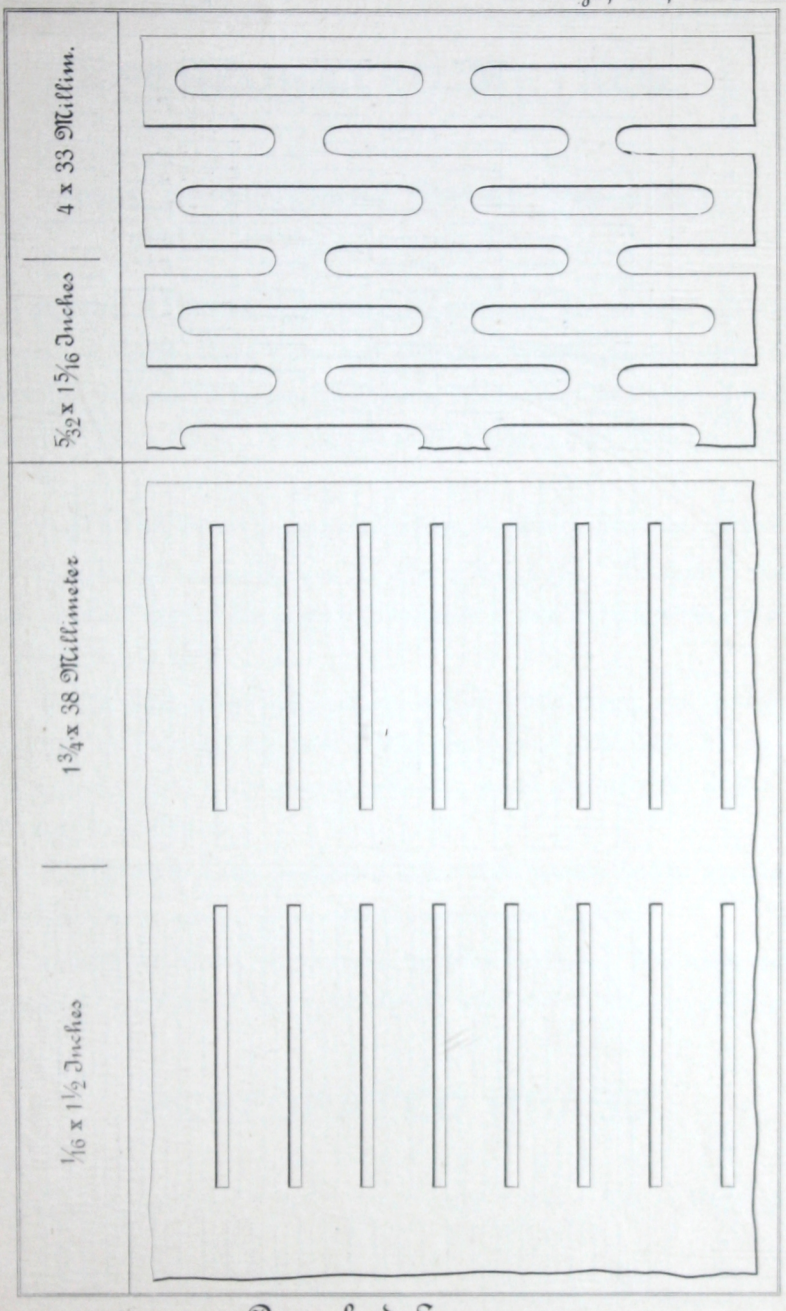


Punched Screens.

Plate 150.

Fraser & Chalmers,

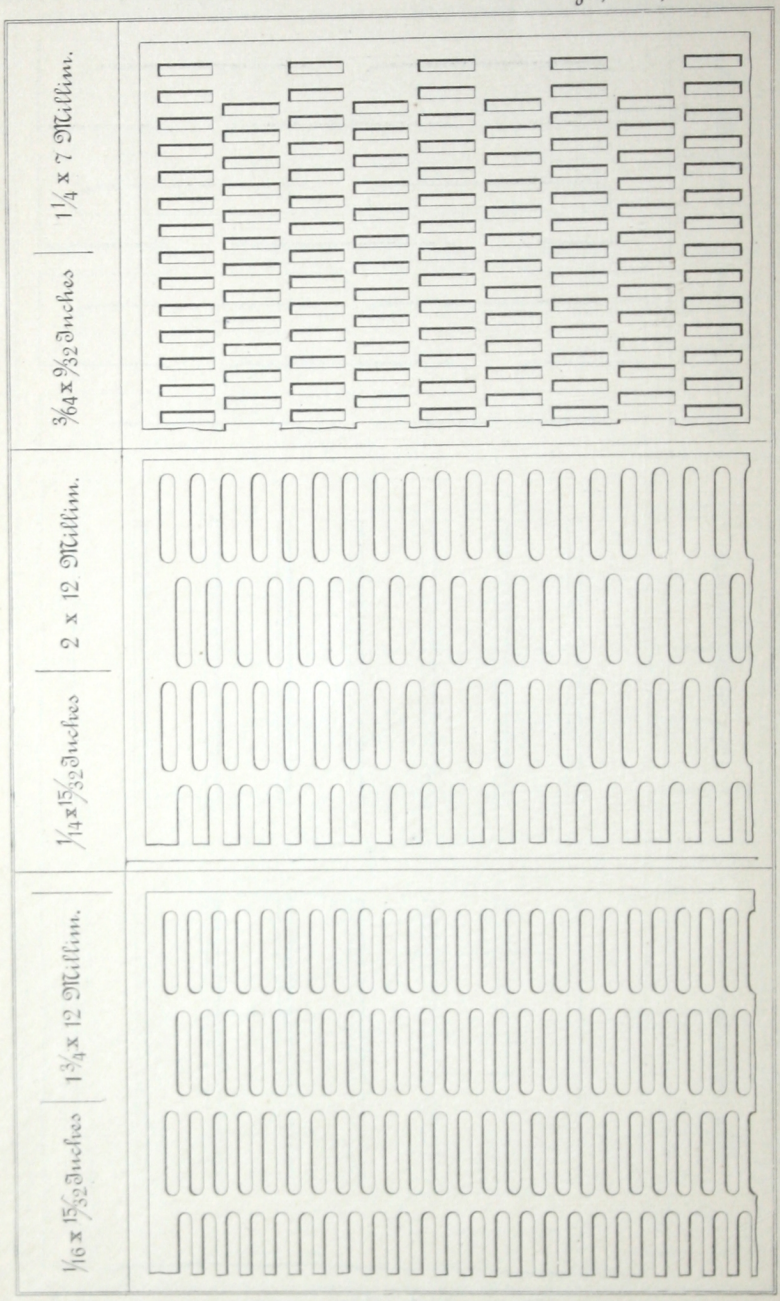
Chicago, Ill., U. S. A.



Punched Screens.

Fraser & Chalmers,

Chicago, Ill., U. S. A.



Punched Screens.

PERFORATED METALS.

USES OF DIFFERENT STYLES AND SIZES.

PLATES 115-104 show perforated screens for Mining and Coal Screens, Fanning Mills, Corn and Oatmeal Screens, Grain-dryers and Cleaners, Cotton Condensers, Coffee and Spice Mills, and other uses too numerous to mention. We furnish these plates in iron, steel, zinc, brass, tin, etc.

PLATE 105 shows Perforated Screens, for Mining and other purposes.

PLATE 137 shows screens for Placer Grizzleys. We furnish these screens in different size and style from those shown in cut, when desired, in either iron or steel.

PLATE 136 shows perforations for malt kiln floors, and oval perforations for mining purposes. We also furnish Malt-kiln Floors, in round perforations when desired, with the metal perfectly flat and true, all ready to lay down.

PLATE 150 shows perforated metal Locomotive Spark Arresters. In either iron or steel. Also, steel or iron Smutter Jackets.

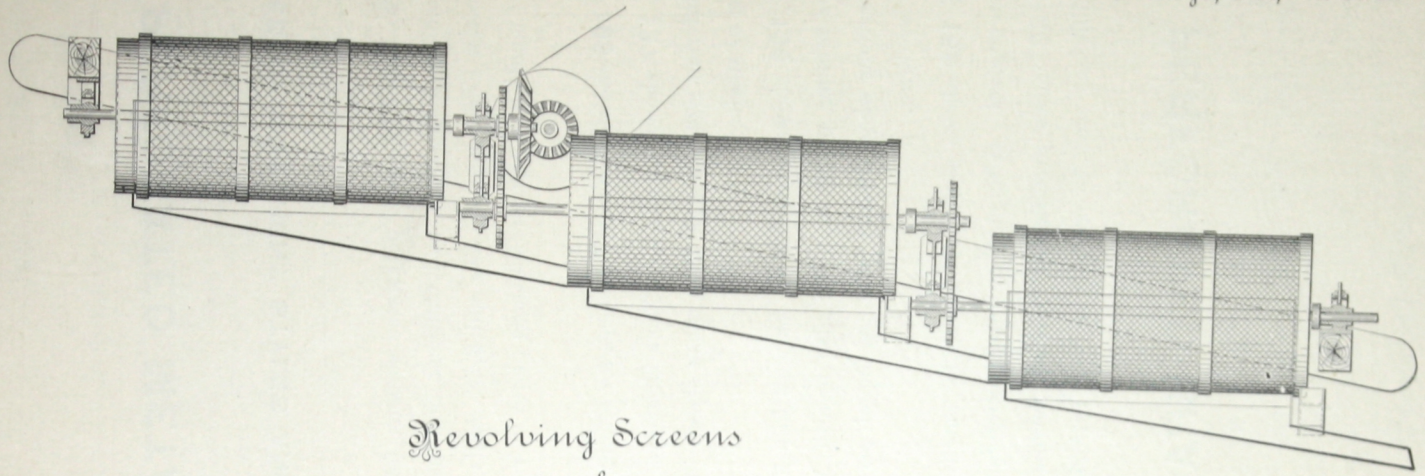
PLATE 32 shows perforations for Flax Screens. We make these screens in different sizes, to correspond with various sizes in growth of flax.

PERFORATED BRASS.

No.	0	1	2	3	4	5	6
Price, per square foot,	90c.	75c.	65c.	60c.	55c.	50c.	50c.

Fraser & Chalmers,

Chicago, Ill., U. S. A.



Revolving Screens

for

Wet Sizing.

Plate 106.

Plate 122.

Fraser & Chalmers,
Chicago, Ill.,
U. S. A.

Fig. 1.

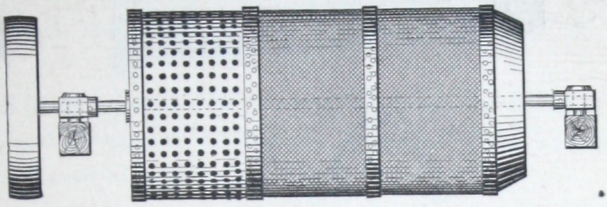


Fig. 2.

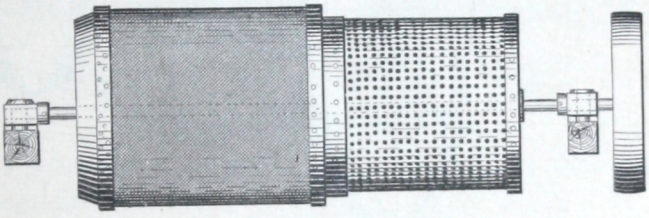
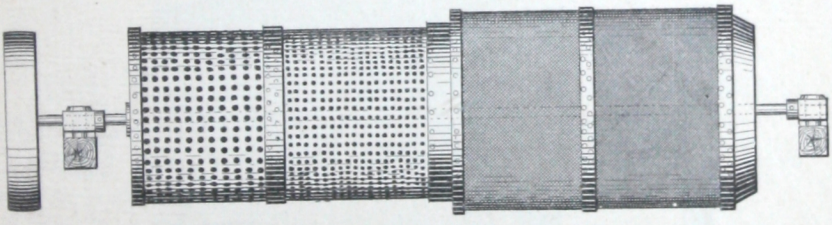


Fig. 3.



R. McN. & CO., ENG.

Revolving Screens.

Plate 123

Fraser & Chalmers,
Chicago, Ill.
U. S. A.

Fig. 1.

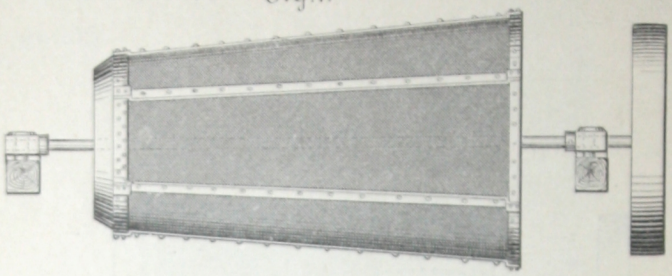


Fig. 3.

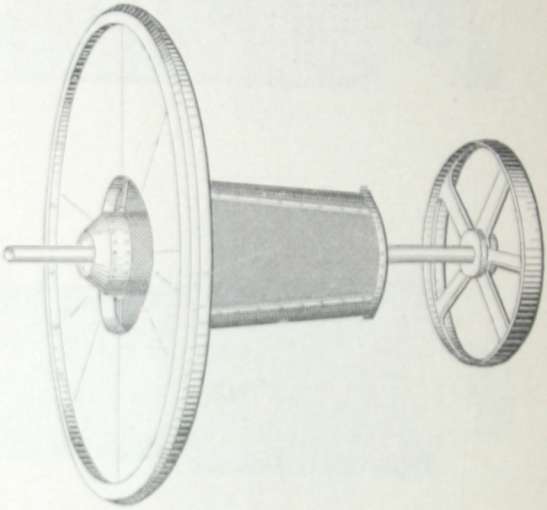
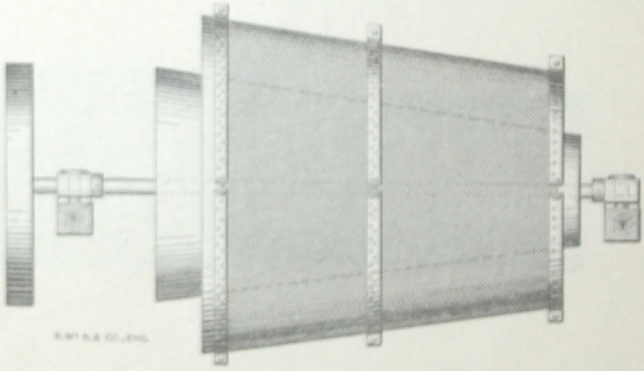


Fig. 2.



Revolving Screens.

PLATE 106, PAGE 12.

Three revolving screens, in one set, and driven by bevel-gearing, attached to the first screen, from which motion is given to the succeeding ones by spur wheels. This arrangement is used in concentrating works for Silver and Galena ores.

The first screen may be used to take out all pieces too large for the process adopted, and which are returned to the crushers or rollers for recrushing.

All that passes through the meshes or holes of the first screen, enters the second, and all passing through the meshes of second, going into the third, and so on where more screens are used.

All particles remaining in the screens, not passing through the meshes or holes, are of a size larger than the holes of the screen on which they are caught, and smaller than the holes of the preceding screen.

Thus the different sizes are separated and treated in separate washing machines. (See our catalogue on concentrating machinery.)

PLATE 122, PAGE 13.

REVOLVING SCREENS.

Fig. 1 represents a cylindrical screen covered with wire cloth and perforated metal.

Fig. 2 represents a compound cylindrical screen, inside screen of perforated metal, with an outside screen half the length of finer wire cloth

Fig. 3. A compound screen, similar to Fig. 2, but longer, and having more sizes in both perforated metal and wire cloth.

PLATE 123, PAGE 14.

Fig. 1. Conical screen of cylindrical form, with straps for stiffening, and, at the same time holding wire cloth in place.

Fig. 3. Compound conical screen of cylindrical form, with a circular elevator, sometimes used where it is necessary to economize space.

Fig. 2. Compound conical screen, illustrating another mode of fastening wire cloth on by bands, easily and quickly removed.

On all these screens perforated metal can be used where wire cloth is shown, according to the requirements of the case. We are prepared to furnish designs and build screens for special purposes.

TABLE FOR PUNCHING ROUND HOLES

—IN—

IRON AND STEEL.

DIAMETER OF HOLE.		Thickness we can Punch.		IRON.
INCHES.	MILLIMETER.	IRON. No. GAUGE.	STEEL. No. GAUGE.	WEIGHT SQ. FT.
	$\frac{3}{4}$	26	28	.8
	1	24	26	1.
$\frac{6}{100}$		22	24	1.25
$\frac{1}{16}$	$1\frac{1}{2}$	20	22	1.5625
	2	18	20	1.875
	$2\frac{1}{2}$	16	18	2.5
	3	14	16	3.125
$\frac{1}{8}$		14	16	3.125
	$3\frac{1}{2}$	13	15	3.75
$\frac{5}{32}$		12	14	4.375
	4	12	14	4.375
	5	10	12	5.625
$\frac{7}{32}$	$5\frac{1}{2}$	9	11	6.25
	6	8	10	6.875
$\frac{1}{4}$		6	8	8.125
	7	6	8	8.125
	8	4	6	9.375
	9	4	6	9.375
$\frac{3}{8}$		3	5	10.
	11	3	5	10.
$\frac{1}{2}$	$12\frac{7}{16}$	2	4	10.625
1	$25\frac{2}{5}$	1	2	11.25
$1\frac{1}{2}$	$38\frac{1}{10}$	1	2	11.25
2	$50\frac{4}{5}$	1	3	11.25
$2\frac{1}{2}$	63	2	4	10.625
$2\frac{3}{4}$	$69\frac{3}{8}$	2	4	10.625
3	$76\frac{1}{5}$	2	4	10.625

PRICES AND OTHER INFORMATION ON APPLICATION.

In this table we have given the number of the thickest metal we can punch. In ordering screens, in most cases, a much thinner metal can be used than that given, and will cost less.

STAMP BATTERY.

NEEDLE SLOT SCREENS.

CLEAR OR INDENTED SLOT IN GENUINE RUSSIA IRON.

No. of NEEDLE.	MESH.	WIDTH OF SLOT.	RUSSIAN GAUGE. THICKNESS OF IRON.	AMERICAN WIRE GAUGE. THICKNESS OF IRON.	WEIGHT PER SHEET.	WEIGHT Per SQ. FT.
1	12	$\frac{58}{1000}$ in.	No. 15	No. 22$\frac{3}{8}$	13$\frac{1}{2}$ lbs.	1.24 lbs.
2	14	$\frac{49}{1000}$ in.	No. 15	No. 22$\frac{3}{8}$	13$\frac{1}{2}$ lbs.	1.24 lbs.
3	16	$\frac{42}{1000}$ in.	No. 15	No. 22$\frac{3}{8}$	13$\frac{1}{2}$ lbs.	1.24 lbs.
4	18	$\frac{35}{1000}$ in.	No. 15	No. 22$\frac{3}{8}$	13$\frac{1}{2}$ lbs.	1.24 lbs.
5	20	$\frac{29}{1000}$ in.	No. 14	No. 23$\frac{1}{4}$	12$\frac{1}{2}$ lbs.	1.15 lbs.
6	25	$\frac{27}{1000}$ in.	No. 13	No. 24	11$\frac{3}{4}$ lbs.	1.08 lbs.
7	30	$\frac{24}{1000}$ in.	No. 12	No. 24$\frac{1}{2}$	10$\frac{3}{4}$ lbs.	0.987 lbs.
8	35	$\frac{22}{1000}$ in.	No. 11	No. 25	10 lbs.	0.918 lbs.
9	40	$\frac{20}{1000}$ in.	No. 10	No. 26	9 lbs.	0.827 lbs.
10	50	$\frac{18}{1000}$ in.	No. 9	No. 27	8 lbs.	0.735 lbs.
11	55	$\frac{16\frac{1}{2}}{1000}$ in.	No. 8	No. 28	7$\frac{1}{4}$ lbs.	0.666 lbs.
12	60	$\frac{15}{1000}$ in.	No. 8	No. 28	7$\frac{1}{4}$ lbs.	0.666 lbs.

Add price of Genuine Russia Iron to above prices, which we will furnish at market rates.

The Slots in Battery Screens are all $\frac{1}{2}$ inch long, set diagonally (unless otherwise ordered), as shown in **PLATE 42, PAGE 18.**

PLATE 134, PAGE 19, also represents Needle Slot Battery Screens, but not so commonly used as those in Plate 42.

All sheets of Genuine Russia Iron are 28 x 56 inches; number of square feet in sheet, 10.88.

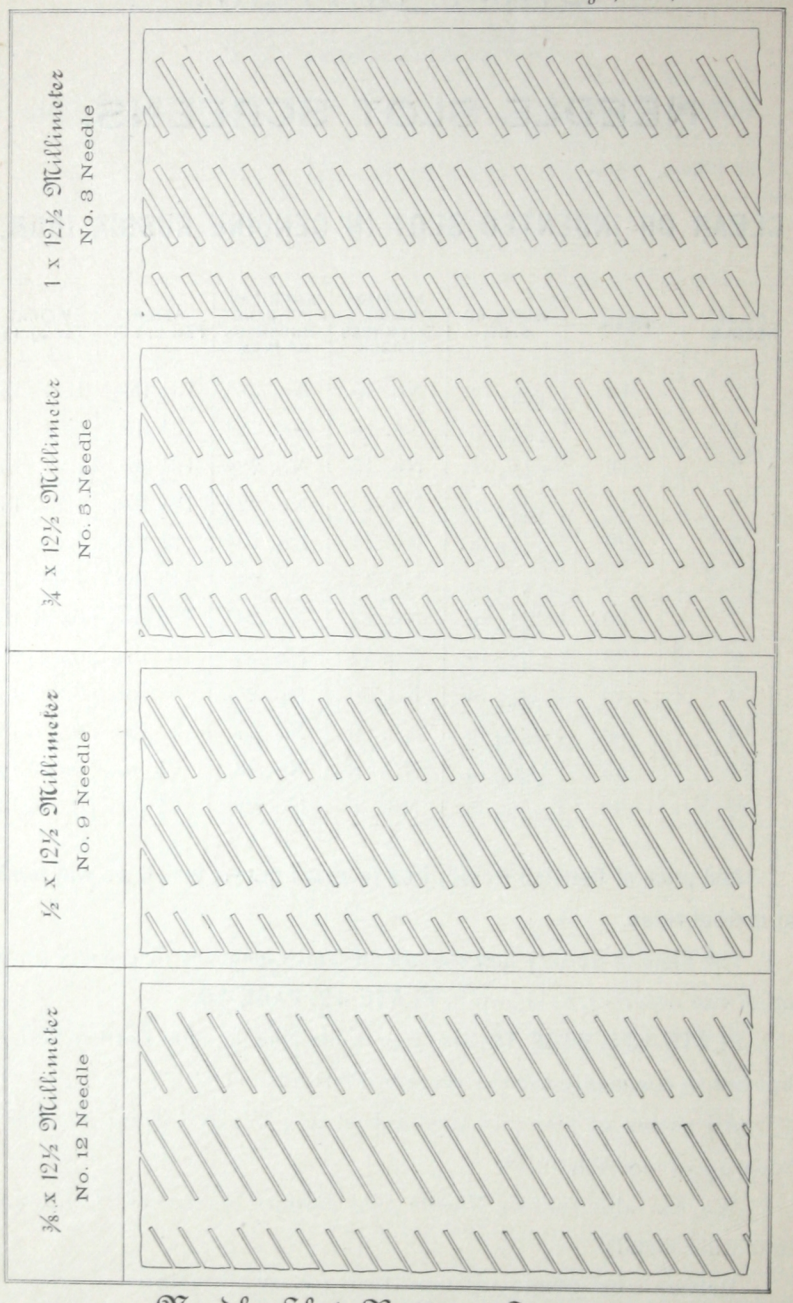
We can also furnish Needle Slot Battery Screens in Steel, Copper and other metals.

Prices and other information on application.

Plate 42.

Fraser & Chalmers,

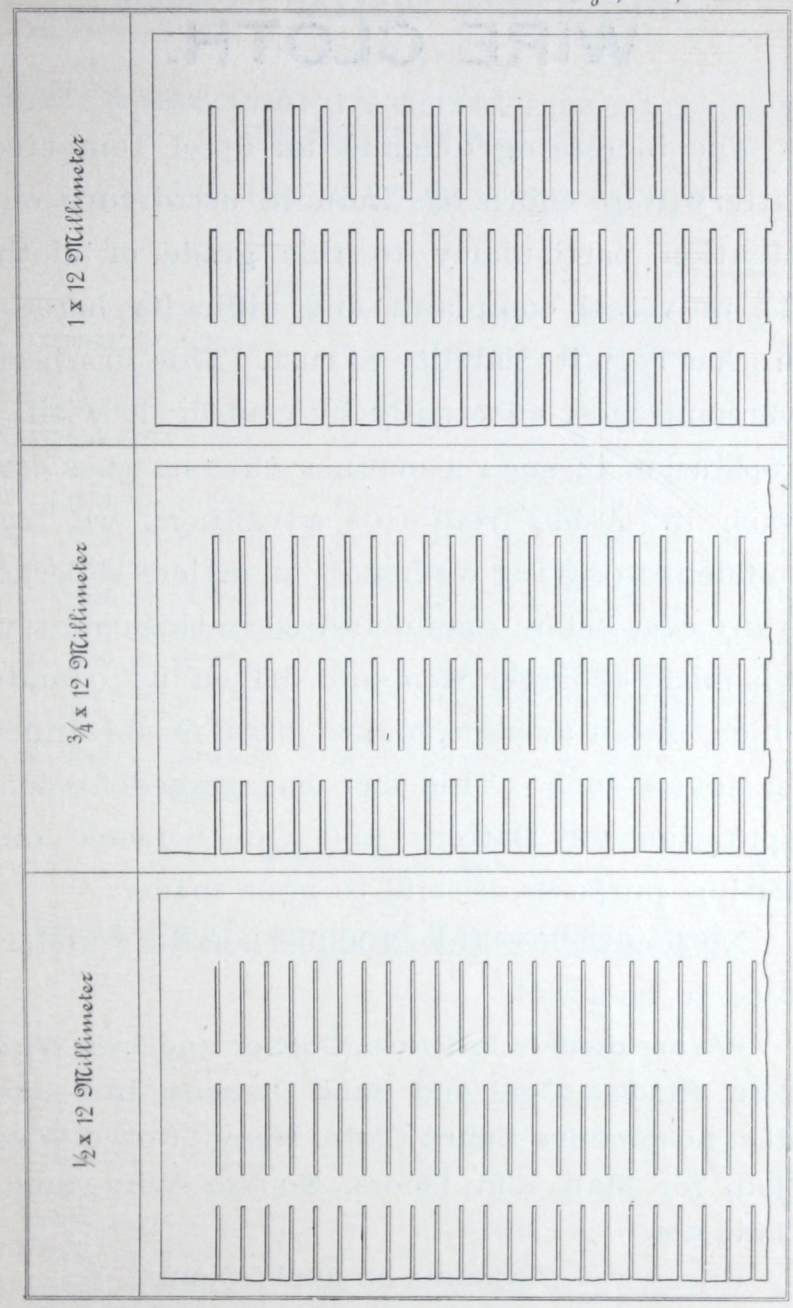
Chicago, Ill., U. S. A.



Needle Slot Battery Screens.

Plate 134. Fraser & Chalmers,

Chicago, Ill., U. S. A.



Needle Slot Battery Screens.

WIRE CLOTH.

The increasing demand for Steel Tempered Battery Wire Cloth has induced us to turn our attention particularly to this grade of cloth. The universal complaint and difficulty heretofore has been its liability to rust. This has been overcome most effectually by coating it with a preparation in such a manner that no rust can touch it. Aside from this advantage, we feel confident in saying we handle an article superior to any ever before manufactured in this country. It is made of larger wire and driven up square, which, on an average, makes it ten meshes finer per square inch. This fact has gained for it a reputation for Battery and Ore Screens and Bolting purposes, second to none made.

No length less than 100 feet shall be understood to be a roll.

We are dealers in Brass, Copper and Iron Wire Cloth, Riddles, Coal and Sand Screens, Iron and Steel Locomotive Spark Cloth, Heavy Rolled Wire Cloth for Malt Kiln Floors, Square Wire Smut Cloth, etc.

Prices and Discounts on application.

REGULAR BATTERY WIRE CLOTH.

THE MESH IN WIRE CLOTH IS THE DISTANCE FROM THE CENTER TO THE CENTER OF WIRE.

HEAVIEST ANNEALED IRON WIRE CLOTH.

	Per sq. ft.
No. 1 Mesh, No. 3 Wire	$0 88
No. ¾ Mesh, No. 4 Wire	88
No. ⅝ Mesh, No. 5 Wire	88
No. 2 Mesh, No. 8 Wire	60
No. 2½ Mesh, No. 9 Wire	60
No. 3 Mesh, No. 10 Wire	60
No. 3½ Mesh, No. 11 Wire	60
No. 4 Mesh, No. 12 Wire	60
No. 4½ Mesh, No. 13 Wire	57
No. 5 Mesh, No. 13 Wire	60
No. 6 Mesh, No. 14 Wire	60
No. 7 Mesh, No. 15 Wire	60
No. 8 Mesh, No. 16 Wire	60
No. 9 Mesh, No. 17 Wire	60
No. 10 Mesh, No. 18 Wire	60

	Per sq. ft.
No. 12 Mesh, No. 19 Wire	$0 60
No. 14 Mesh, No. 20 Wire	60
No. 16 Mesh, No. 22 Wire	60
No. 18 Mesh, No. 23 Wire	60
No. 20 Mesh, No. 24 Wire	62
No. 22 Mesh, No. 25 Wire	65
No. 24 Mesh, No. 26 Wire	65
No. 30 Mesh, No. 28 Wire	66
No. 40 Mesh, No. 31 Wire	68
No. 50 Mesh, No. 34 Wire	72
No. 64 Mesh, No. 36 Wire	68
No. 64 Mesh, No. 37 Wire	75
No. 70 Mesh, No. 38 Wire	80
No. 74 Mesh, No. 39 Wire	90
No. 80 Mesh, No. 40 Wire	1 05

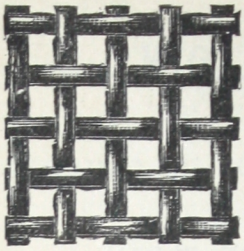
Discounts on application.

PRICE LIST
OF
Heavy Steel Tempered Battery Wire Cloth.

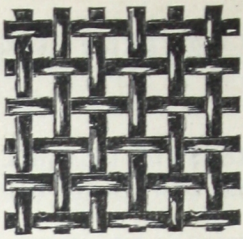
	Per sq. ft.
No. 4 Mesh, No. 12 Wire	$0 60
No. 5 Mesh, No. 13 Wire	60
No. 6 Mesh, No. 14 Wire	60
No. 7 Mesh, No. 15 Wire	60
No. 8 Mesh, No. 16 Wire	60
No. 9 Mesh, No. 17 Wire	60
No. 10 Mesh, No. 18 Wire	60
No. 12 Mesh, No. 19 Wire	60
No. 14 Mesh, No. 20 Wire	60

	Per sq. ft.
No. 16 Mesh, No. 22 Wire	$0 60
No. 18 Mesh, No. 23 Wire	60
No. 20 Mesh, No. 24 Wire, Coated	62
No. 24 Mesh, No. 26 Wire, Coated	65
No. 30 Mesh, No. 28 Wire, Coated	66
No. 35 Mesh, No. 30 Wire, Coated	67
No. 40 Mesh, No. 31 Wire, Coated	68
No. 45 Mesh, No. 33 Wire, Coated	70
No. 50 Mesh, No. 34 Wire, Coated	72

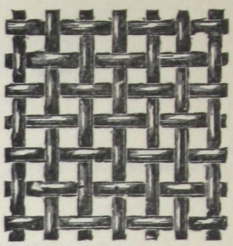
Discounts on application.



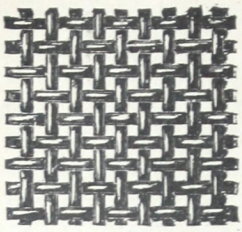
No. 4 Mesh. No. 12 Wire.
60 cents per square foot.



No. 5 Mesh. No. 13 Wire.
60 cents per square foot.

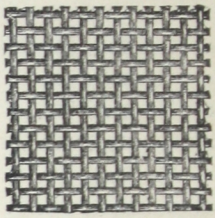


No. 6 Mesh. No. 14 Wire.
60 cents per square foot.

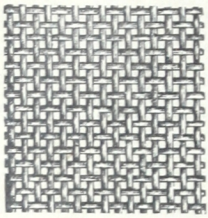


No. 8 Mesh. No. 16 Wire.
60 cents per square foot.

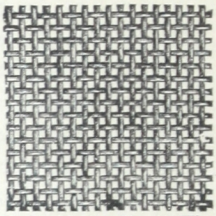
No. 10 Mesh. No. 18 Wire.
60 cents per square foot.



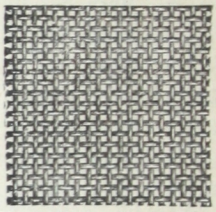
No. 12 Mesh. No. 19 Wire.
60 cents per square foot.



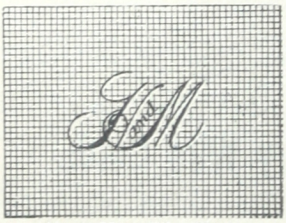
No. 14 Mesh. No. 20 Wire.
60 cents per square foot.



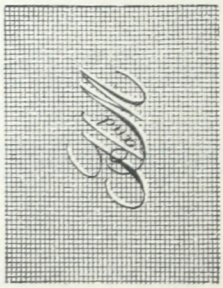
No. 16 Mesh. No. 22 Wire.
60 cents per square foot.



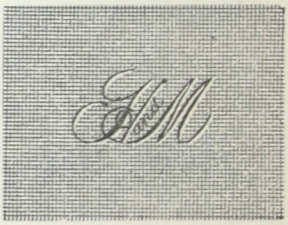
No. 18 Mesh. No. 23 Wire.
60 cents per square foot.



No. 30 Mesh Wire Cloth.

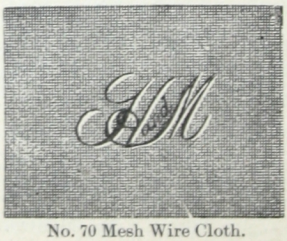


No. 40 Mesh Wire Cloth.



No. 50 Mesh Wire Cloth.

No, 60 Mesh Wire Cloth.



No. 70 Mesh Wire Cloth.

No. 80 Mesh Wire Cloth.

EXACT SIZE OF WIRE CLOTH.

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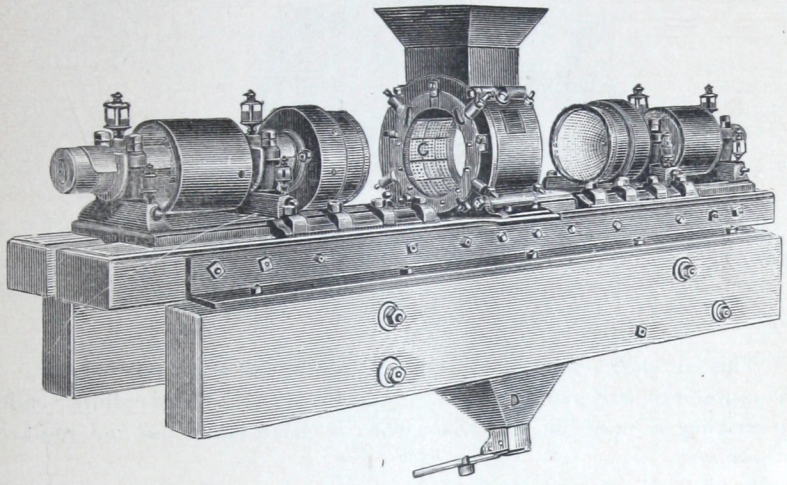
A ROCK CRUSHER AND PULVERIZER COMBINED.

For Phosphates, Emery, Ores, and other hard and refractory materials.

DEVELOPING AN ENTIRELY NEW PRINCIPLE.

The **material grinds itself**, avoids the usual wear and tear of machinery, doing the work in a more rapid and thorough manner than any known machine.



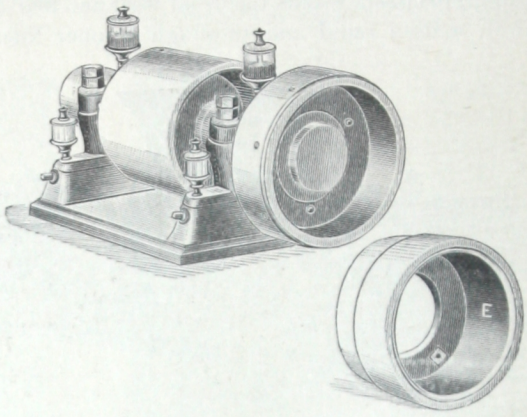
View of the interior of the mill, showing the screen C, in position, through which the ground material passes, and falls into the bin marked D. When necessary to reduce to a greater fineness, the coarser part is re-conveyed to the mill by an elevator.

The screen, being composed of small sections, is conveniently transported, and the worn parts easily replaced. The wear upon it is very slight, as it is always protected from the action of the rock thrown from the heads, by a cushion of interposing material formed by a portion of the rock which always rests against the screen.

The material is conveyed through the opening at the top to the hopper, filling the revolving cylinders or heads, which being put in motion, hurl their contents against each other with such power that the rock is at once crushed and ground to atoms. *The mill does not grind the material*, but simply furnishes the power that *compels it to grind itself;* consequently the hardness of the material does not affect the result, as it acts upon itself and must be ground.

THE STURTEVANT MILL

Is made in 5 sizes, capacity of largest size (20 inch) is from **two to ten tons per hour,** to a fineness of 40 mesh. This mill has put through 10 tons of River Phosphate Rock in 38 minutes, all passing a 40 mesh screen, and receives pieces 10 inches square, or larger than a man's head, reducing all in one operation.



This cut shows the revolving head or cylinder when taken apart. It is composed of two pieces, one of which, E, a simple metal cylinder called the bushing, is movable, and when worn is easily taken out and replaced by another.

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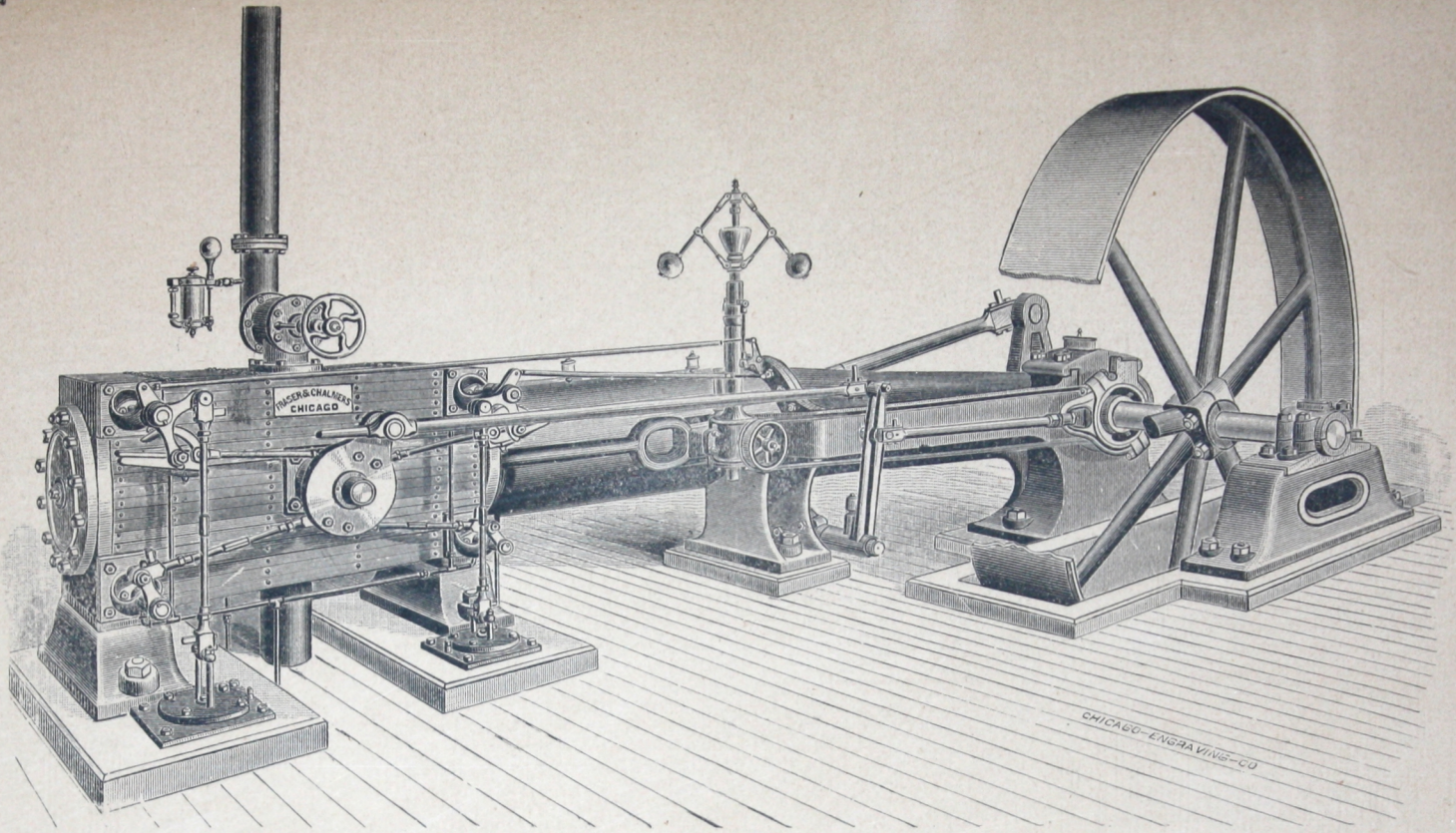

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